

The Hemispherical Solar Observatory

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On September 10, 2025, I invented a special type of sundial which, as far as I have come across, is an original device (i.e., it is fundamentally different than the hemicycle or scaphe by Aristarchus of Samos; the hemispherium or hemicyclium by Berosus the Chaldean; or the angbu ilgu by Chang Yöngsil et al.). This sundial not only accurately tells the time of day, but it also accurately tracks the progression of the seasons, and indeed the 12 months of the Tropical Zodiac (i.e., the Zodiac of traditional Western astrology).

It is a half-sphere with a straight cylindrical gnomon-bar positioned fully across its great circle (i.e., the great circle of longitude that forms the rim opening of the half-sphere) with the ends of the gnomon-bar at the North and South Poles respectively, such that the middle of the gnomon's length and the center of its cylinder is equidistant to every point on the inner surface of the half-sphere. The gnomon-bar (and hence also the great circle of the half-sphere) would be aligned with the Earth's axis of rotation, i.e., the tilt of the half-sphere in reference to the ground would change depending on one's latitude upon the Earth. In this manner, it would work the same and be the same accuracy anywhere upon the surface of the Earth (except for time-of-day readings at the exact North and South Poles of the Earth, since the time of day has no nature-given physical meaning at the exact Poles).

It shows where the overhead position of the Sun is upon the Earth via the shadow cast by a spherical nodus at the middle of the gnomon-bar (here I have in mind a nodus twice the radius of the cylindrical gnomon-bar). Because of this, its north-south and east-west inscriptions upon the inner surface of the half-sphere are opposite that of the actual directions of the Earth (since a shadow cast is opposite the direction of its surrounding source of light). And because the shadow-disk cast by the spherical nodus indicates the overhead position of the Sun on the Earth, the most accurate readings would be taken from the center of said shadow-disk.

The gnomon-bar would indicate the actual nature-given local time of day (i.e., with noon sharp [12 m.] aligned with the local meridian) from 6 a.m. to 6 p.m. via hour and sub-hour graduations upon the inscribed equator of the half-sphere. In this capacity, it would function exactly as an equatorial bow sundial. Again, the most accurate readings would be taken from the center of the shadow cast by the gnomon-bar upon the equator inscribed within the inner surface of the half-sphere. The two graduations indicating exact 6 a.m. and 6 p.m., respectively, would be located at opposite ends of the very rim of the half-sphere (yet still upon its inner surface).

The nodus would indicate the seasons, and indeed the 12 months of the Zodiac in Tropical Astrology.

Below is a textual representation of how the inner surface of the half-sphere would be inscribed:

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South Pole

-----[Antarctic Circle]-----

-----[Tropic of Capricorn; Southern Solstice]-----

[Winter/Summer] ↓ 10/4 Capricorn ♐ | ↑ 9/3 Sagittarius ♏

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↓ 11/5 Aquarius ♒ | ↑ 8/2 Scorpio ♏
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↓ 12/6 Pisces ♓ | ↑ 7/1 Libra ♎ [Autumn/Spring]
-----[Equator; Northward/Southward Equinoxes; (←East) | 6 AM | 7 AM | 8 AM | 9 AM | 10 AM | 11 AM
| 12 M | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM (West→)]-----
[Spring/Autumn] ↓ 1/7 Aries ♈ | ↑ 6/12 Virgo ♍
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↓ 2/8 Taurus ♉ | ↑ 5/11 Leo ♌
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↓ 3/9 Gemini ♊ | ↑ 4/10 Cancer ♋ [Summer/Winter]
-----[Tropic of Cancer; Northern Solstice]-----

-----[Arctic Circle]-----

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North Pole

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The reason for the alternate seasons and month numbers inscribed (e.g., "[Spring/Autumn] ↓ 1/7 Aries ♈", etc.) is because the secondary seasons and month numbers give the seasons and natural month numberings for the Southern Hemisphere. Furthermore, for those whose gestations occurred mostly in the Southern Hemisphere, the secondary month numberings would correspond to the primary month numberings for purposes of astrological influence on one's personality. For details on this, see my following article:

* Jamie Michelle, "Tropical Astrology", Internet Archive, June 16, 2022 (orig. pub. June 11, 2020), [ark:/13960/t0wq8t60r](https://web.archive.org/web/20220616062714/http://jamiemichelle.freevar.com/Jamie-Michelle-Tropical-Astrology.html), <https://web.archive.org/web/20220616062714/http://jamiemichelle.freevar.com/Jamie-Michelle-Tropical-Astrology.html>, <https://archive.today/2oKNF>, <https://tilde.club/~jamiemichelle/Jamie-Michelle-Tropical-Astrology.html>.

My above-described invention, which I have named the Hemispherical Solar Observatory, is hereby released under Version 3.0 of the "Attribution (By)" Creative Commons license and/or Version 1.3 of the GNU Free Documentation License.

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In other news, I got struck by lightning at 3:59:25 p.m. on Tuesday, June 3, 2025. The reason I can pinpoint to the second when it was that I got struck by lightning is because my digital watch (which has a metal back) got reset to 12:00:00 midnight between Saturday, December 31, 2005 and Sunday, January 1, 2006 when I got struck.

Said watch was bought from a Walmart in Florida on Monday, June 2, 2025, 18:51:49 (i.e., the time the receipt shows my debit card was charged). The following information is printed on the label attached to the box the watch came in: Skechers SR2132W; UPC: 7 96483 65834 9; 669062801; 05/2024; \$19.98.

Below is Walmart's webpage for this watch:

* "Skechers Crenshaw Women's Purple Digital Chronograph Watch (SR2132W)", <https://www.walmart.com/ip/Skechers-Crenshaw-Women-s-Purple-Digital-Chronograph-Watch-SR2132W/5459864005>, <https://archive.today/8koVV>, <https://www.freezepage.com/1749048933MRZSBKLCGO>.

I had no working watch before I bought the foregoing one the day before I was struck by lightning. I was considering purchasing a cheaper Skechers analog watch before I decided upon the above digital watch; which, had I done so, would not have gotten reset, and so I wouldn't have been able to compute to the second when I was struck by lightning (unless the aforesaid analog watch stopped altogether and was already accurately set to the second).

The lightning bolt hit a large pine tree about 20 feet away from me, entered my left foot and exited my right elbow (I was reclined at the time). Where it exited my elbow, it burnt a Lichtenberg figure in the shape of a cross.

The lightning bolt blew a large crack outward at the base of the tree, while also blowing off the bark from around the blown-out crack.

The following are two photographs, one of my said burnt elbow and one of the struck tree, respectively:

* <https://web.archive.org/web/20251224213545/https://ibb.co/bgyh1hDc> , <https://megalodon.jp/2025-1225-0649-36/i.ibb.co/qM4GBGVt/IMG-20250604-194122749-HDR.jpg> , <https://www.freezepage.com/1766613105XXVWKDFKTW> .

* <https://web.archive.org/web/20251224213938/https://ibb.co/39S99CkR> , <https://megalodon.jp/2025-1225-0653-57/i.ibb.co/v6L66jDX/IMG-20250605-160903093-HDR.jpg> , <https://www.freezepage.com/1766613262SJMEFQLWQH> .

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Author, under the nom de plume of James Redford, of *The Physics of God and the Quantum Gravity Theory of Everything: And Other Selected Works* (Chişinău, Moldova: Eliva Press, 2021), 268 pp., ISBN-10: 1636482775, ISBN-13: 9781636482774. See my curriculum vitae (ark:/13960/t6g19878v): <https://jamesredford.github.io/Redford-Curriculum-Vitae.pdf> , <https://megalodon.jp/2026-0322-0014-19/files.catbox.moe/cp4p8g.pdf> .